

Tactic Craft

Language-Driven Tactical Adaptation for StarCraft II



TacticCraft

Perception block: extract feature

Decision block: decision making

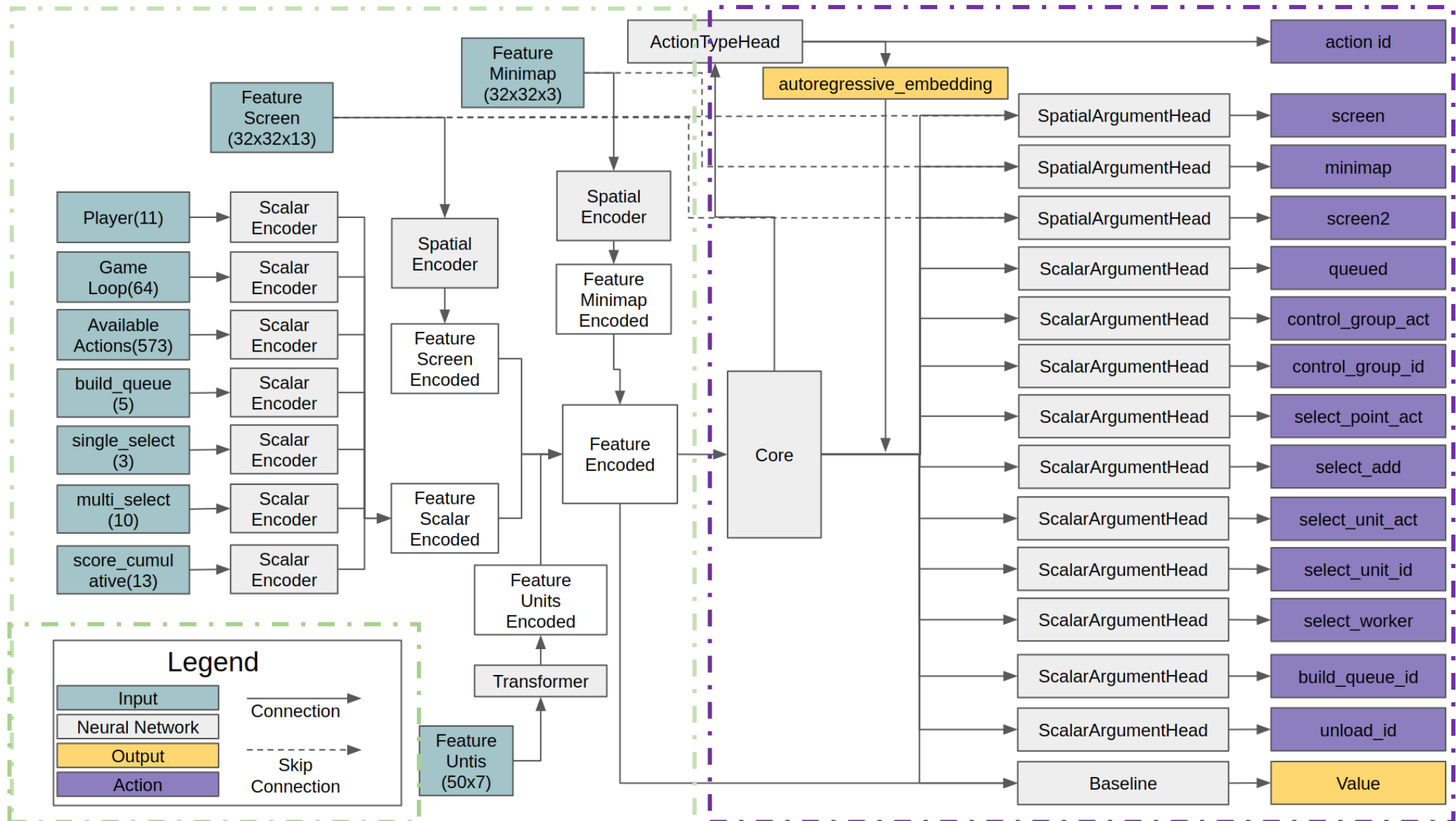
AlphaStar

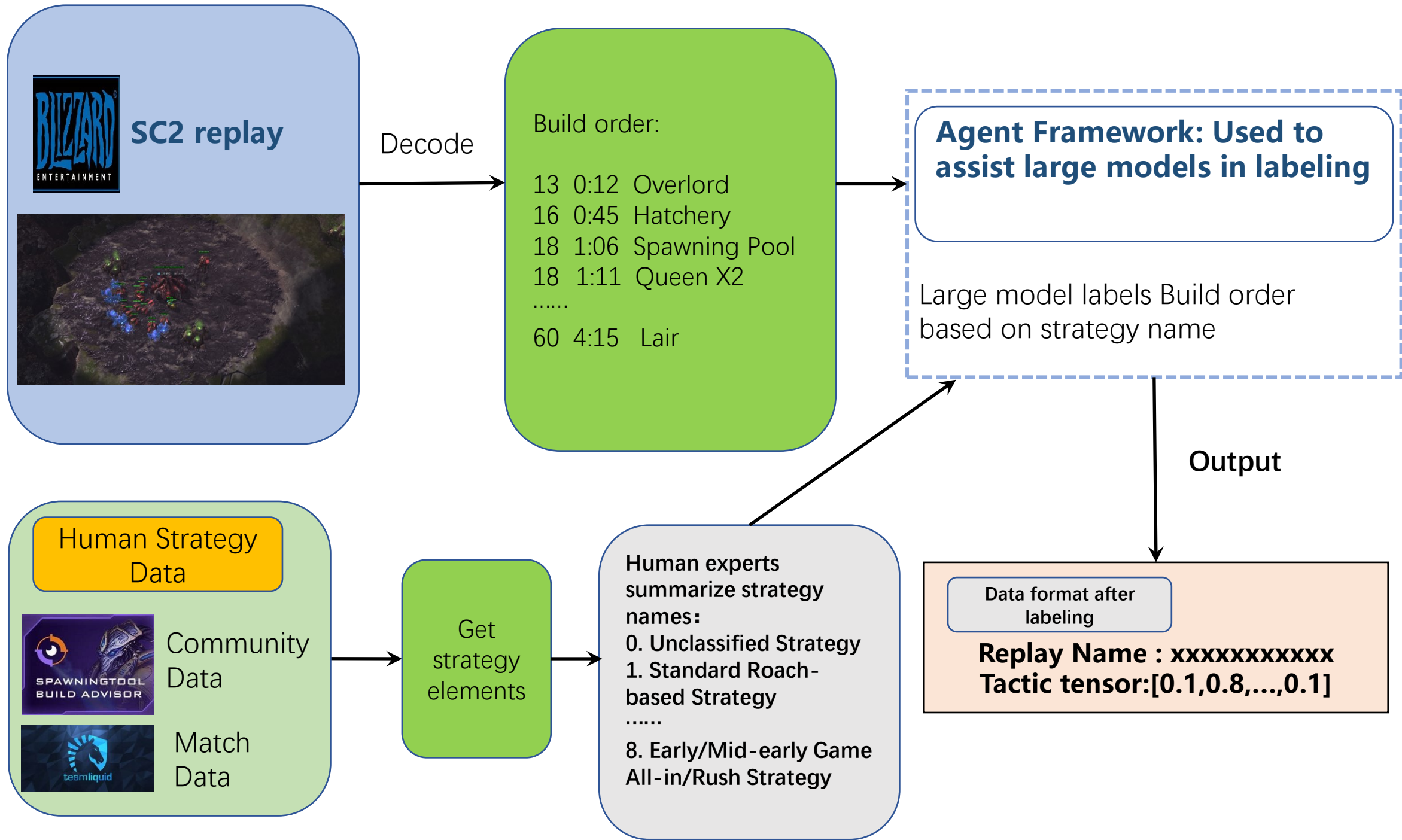
Network
Structure:

Perception
Block

&

Decision
Block







TacticCraft

 Weight Frozen

Perception block

Decision block

Fine-tuning

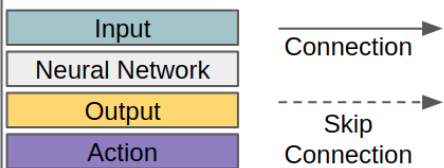
Adapter

KL

Tactic Tensor

Replay

Legend



Feature Minimap (32x32x3)

Feature Screen (32x32x13)

Player(11)

Scalar Encoder

Game Loop(64)

Scalar Encoder

Available Actions(573)

Scalar Encoder

build_queue (5)

Scalar Encoder

single_select (3)

Scalar Encoder

multi_select (10)

Scalar Encoder

score_cumulative(13)

Scalar Encoder

Spatial Encoder

Feature Screen Encoded

Feature Scalar Encoded

Spatial Encoder

Feature Minimap Encoded

Feature Encoded

Feature Units Encoded

Transformer

Feature Units (50x7)

ActionTypeHead

autoregressive_embedding

SpatialArgumentHead

SpatialArgumentHead

SpatialArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

ScalarArgumentHead

Baseline

action id

screen

minimap

screen2

queued

control_group_act

control_group_id

select_point_act

select_add

select_unit_act

select_unit_id

select_worker

build_queue_id

unload_id

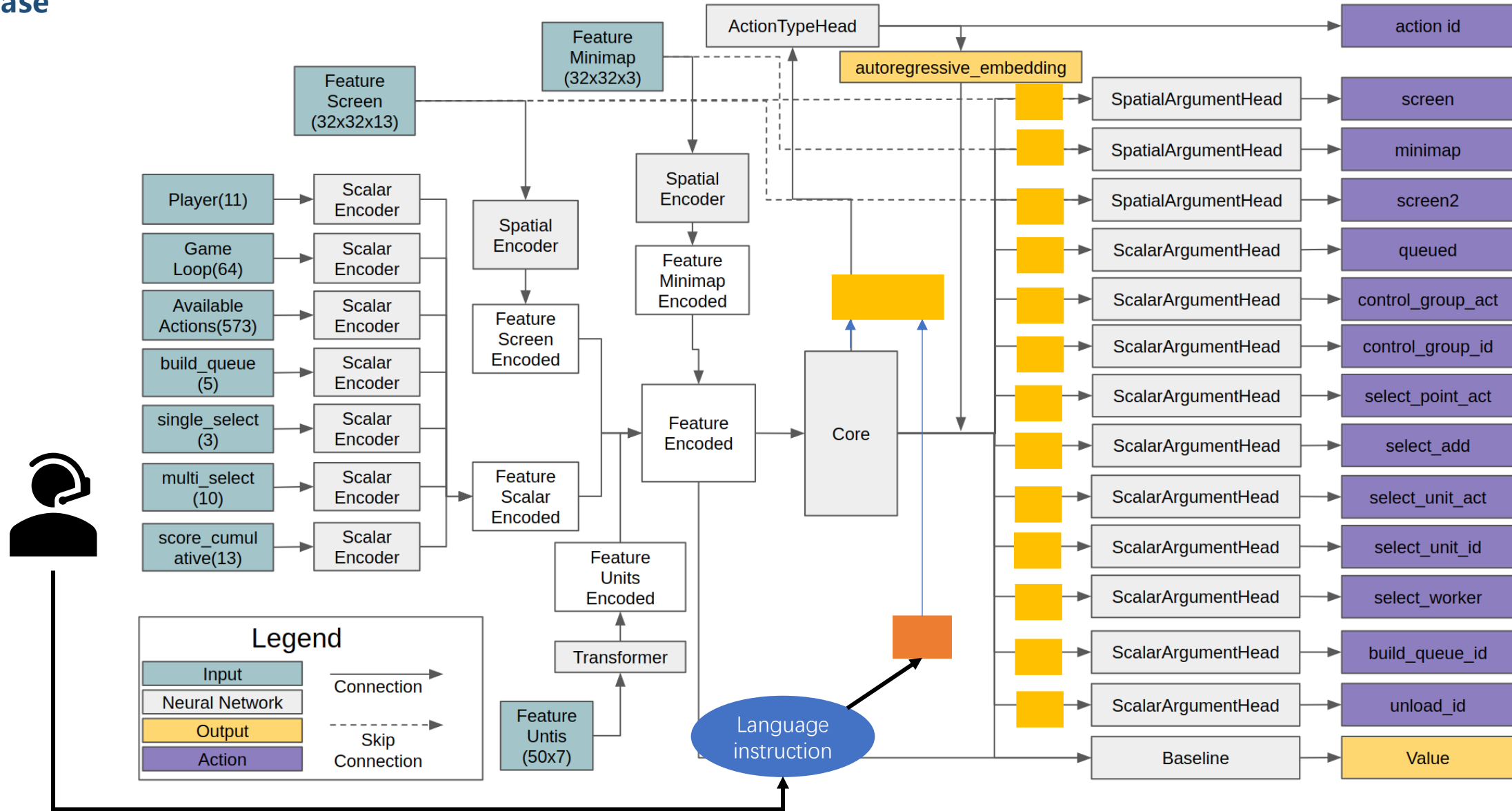
Value

Tactic tensor

Dataset
Replay Name : xxxxxxxxxxxx
Tactic tensor:[0.1,0.8,...,0.2]



Inference Phase



生产

Build orders: 3 bases Zergling baneling pressure and transfer to Roaches

Baneling attack

4:20

国王藏宝地-天梯版

Quick
3 bases

Higher
worker count

0	0423_1000		51 /66	35 +1623	159 +134	37	9	587	575	-0	-7
			补给	晶体矿	瓦斯	工人	部队	APM	科技	战败	闲置时间
0	作弊难度 (视...		54 /60	15 +1203	570 +313	32	22	100	450	-0	-0

生产

22

123

Build orders: 3 bases +1 Zergling
Rush

- 单位就绪
- 单位就绪
- 2 额外的幼虫孵化完成。

Zergling
Rush

Few
Drones

4:19
宿怨战场-天梯版

Quick
3 bases



0	0423_1000		61 /66	20 +1679	72 +134	34	28	575	-50	-3	
			补给	晶体矿	瓦斯	工人	部队	武器和护甲	科技	战败	闲置时间
0	作弊难度 (视...		52 /68	120 +1175	381 +335	30	22	450	-300	-0	

生产

2

2

1

1

3

1

Build orders: 2 bases
Mutalisk

- 2 额外的幼虫孵化完成。
- 单位就绪
- 单位就绪
- 3 单位就绪
- 建筑就绪

Mutalisk harassment



7:01
宿怨战场-天梯版

2 bases

Quick Lair

Use all resources to build Mutalisk

0	0423_1000	68 /76	140 +1427	52 +492	37	30	487	2150	-1650	-7
		补给	晶体矿	瓦斯	工人	部队	APM	科技	战败	闲置时间
0	作弊难度 (疯...	74 /84	673 +1388	1324 +772	32	40	923	1925	-1900	-77